Organochlorine (OC) Compounds in British Columbia Marine Mammals—An Overview of Trends And Concerns

R.F. Addison *and* ***P.S. Ross***
Institute of Ocean Sciences, Fisheries and Oceans Canada

This paper reviews the information available about the major groups of organochlorine (OC) compounds in some BC marine mammals. Most data pertain to harbour seals (*Phoca vitulina*) and to killer whales (*Orcinus orca*) but a few analyses have been carried out on stranded and dead animals of other species. The OCs studied have been mainly the polychlorinated dibenzo-*p*-dioxins and furans (PCDD/F), analysed mainly in response to concerns about the impact of pulp mill discharges) and the DDT-group of insecticides and the polychlorinated biphenyls (PCBs); the latter groups have been analysed for more general environmental interest.

Harbour seals from the Strait of Georgia contained high PCDD/F concentrations in the early 1990's, most probably in response to contamination of their food web by compounds discharged from the coastal pulp mills situated in the Strait. Harbour seals from a "reference" site in western Vancouver Is., not contaminated with pulp mill PCDD/F, contained much lower residue concentrations which were comparable with data recorded from uncontaminated sites in eastem Canada, western Europe and the Arctic. Preliminary analyses suggest that PCDD/F concentrations in Strait of Georgia harbour seals may be declining, in response to the reduction in PCDD/F discharges from coastal pulp mills which began in the early 1990's. Concentrations of PCBs in one group of killer whales from the Strait of Georgia (sampled in the early to mid 1990's) were very high, and the route of exposure and uptake of PCBs by this group is currently under investigation. Toxic equivalents (TEQ) derived from both the PCB concentrations in killer whales, and PCDD/F concentrations in harbour seals from the Strait of Georgia exceeded the threshold inferred for disruption of normal immune function during experimental feeding studies on captive harbour seals, and this raises concerns about the general health of these marine mammal groups and of the ecosystem of which they are a part.